

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

PPM Energy, Inc.
Rugby Wind Farm-Pierce County
Siting Application

Case No. PU-05-47

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

October 3, 2005

Appearances

Commissioners Tony Clark, Susan E. Wefald and Kevin Cramer.

Lawrence Bender, Attorney at Law, Pearce & Durick 314 East Thayer Avenue, Bismarck, North Dakota 58501, on behalf of the Applicant, PPM Energy, Inc.

William W. Binek, Chief Counsel, Public Service Commission, State Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Allen C. Hoberg, Administrative Law Judge and Director, Office of Administrative Hearings, 1701 North 9th Street, Bismarck, ND 58501-1882, as Procedural Hearing Officer.

Preliminary Statement

On January 26, 2005, PPM Energy (PPM) filed a Letter of Intent (LOI) to submit an application for a Certificate of Site Compatibility to develop a wind energy facility, referred to by PPM as the Rugby Wind Farm, in Pierce County, North Dakota (Application).

On February 9, 2005, PPM filed a supplement to its LOI requesting the Commission shorten the prescribed one year notice period between when the LOI is filed and when the application for a Certificate of Site Compatibility is filed.

On March 1, 2005, the Commission shortened the one year notice period to one day.

On June 16, 2005, PPM filed the Application.

On June 29, 2005, the Commission deemed the Application complete and issued a Notice of Filing and Notice of Hearing, scheduling a public hearing for July 29, 2005 at 9

a.m. CDT at the Pierce County Courthouse, 240 2nd Street SE, Rugby, North Dakota. The notice identified the following issues to be considered:

1. Will the location, construction, and operation of the proposed wind farm produce minimal adverse effects on the environment, natural resources, and upon the welfare of the citizens of North Dakota?
2. Is the proposed wind farm compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed wind farm minimize adverse human and environmental impacts while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?
4. What minimum intervals between turbines and minimum setbacks from environmentally sensitive areas, roads, residences, property lines or other setbacks for turbines or other structure locations should be required?
5. Is it appropriate for the Commission to waive the procedures as requested in the application including the request for a single consolidated application for Corridor Certificate and Route Permit?

The hearing was held as scheduled.

Upon commencement of the hearing, PPM moved, for the purpose of expediting the hearing process, that this case be combined and consolidated with Case No. PU-05-305; a companion case filed by PPM for siting of a 9.5 mile transmission line from the site of the proposed wind energy facility sought to be sited in this Application to the transmission grid. PPM's request to combine and consolidate Case No. PU-05-305 with this case for purposes of expediting the hearing process was granted.

The Commission received certain late filed exhibits as ordered at the hearing on August 10, 2005.

The Commission received correspondence and information from J T McIntire on August 2, August 9, and August 17 stating his opinions and opposition to the wind farm project. The Commission determined that this correspondence be included in the record to demonstrate the McIntires' objection to the applications.

On August 17, 2005 J T and Roberta McIntire filed a petition to intervene in Case Nos. PU-05-47 and PU-05-305. On August 23, 2005 PPM filed its response. The

Commission granted the petition to intervene in Case No. PU-05-47 on September 7, 2005 limiting the intervention to participation in future proceedings by the Commission for the approval of turbine site locations and issues identified and raised for those proceedings. The Commission denied the petition to intervene in Case No. PU-05-305.

On August 24, 2005 PPM filed proposed and alternate turbine locations and a letter addressing the same.

A second Notice of Hearing was issued August 30, 2005 scheduling a hearing for September 26, 2005 at 10 a.m. CDT at the Pierce County Courthouse. The issue to be considered was whether PPM's proposed and alternative wind turbine locations should be approved. The hearing was held as scheduled.

J T McIntire appeared as an Intervenor.

The Commission received certain late filed exhibits as ordered at the September 26 hearing on September 27, 2005.

Having allowed all interested persons an opportunity to be heard, and having heard, reviewed and considered all testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. PPM proposes to construct and operate a wind energy facility (the Rugby Wind Farm) to be located in Pierce County, North Dakota approximately 4 miles north of the city of Rugby. The proposed capacity of the wind energy facility would be 150 megawatts (MW) comprised of up to 100 turbines, each with a capacity of 1.5 to 3.0 MW.

2. PPM is a diversified energy company headquartered in Portland, Oregon. PPM owns and operates a wide variety of energy facilities in the United States and Canada, such as gas generation, gas storage, wind generation and electric transmission. The application for the Rugby Wind Farm and its companion application for the 230 kV transmission line (Case No. PU-05-305) represent the first facilities to be owned and operated by PPM in the state of North Dakota.

3. Construction of the proposed Rugby Wind Farm is expected to take six to eight months. PPM estimates that between 150 to 200 people will be employed during construction. Most construction workers would be employees of construction and equipment manufacturing subcontractors. Construction contractors and subcontractors would be a combination of local companies and workers as well as subcontractors based outside the state.

4. PPM estimates that between eight to ten full time permanent jobs will be created for operation and maintenance of the Rugby Wind Farm after construction is

completed and the facility is fully operational. Based on experience at its other projects, PPM stated it is likely that several (and perhaps a majority) of the eight to ten full time permanent jobs will be filled with local individuals.

5. The total estimated cost for construction of the PPM proposed Rugby Wind Farm is approximately \$170 million.

6. North Dakota Century Code Section 49-22-16(3) provides that an applicant for a certificate of site compatibility from the Commission shall obtain all permits that may be required to construct and operate the energy conversion facility.

7. Hearing Exhibit 8 contains a complete listing of all the permits and approvals that must be obtained for the Rugby Wind Farm and the status of each of those permits or approvals.

8. North Dakota Century Code Section 49-22-16(2) provides that no energy conversion facility site shall be designated that violates any county or city land use, zoning or building rules, regulations, or ordinances. All necessary rezoning and conditional use permits for the proposed Rugby Wind Farm and its associated facilities have been obtained from the Pierce County Board of County Commissioners. Hearing Exhibit 5 is a copy of the Pierce County Conditional Use Permit, dated July 12, 2005, for the Rugby Wind Farm.

9. North Dakota Administrative Code Chapter 69-06-08 sets forth certain criteria to guide the Commission in evaluating the suitability of granting an application for a certificate of site compatibility. The criteria in North Dakota Administrative Code Section 69-06-08-01 are classified as Exclusion Areas, Avoidance Areas, Selection Criteria and Policy Criteria. An energy conversion facility shall not be sited within an Exclusion Area. An energy conversion facility shall not be sited within an Avoidance Area unless the applicant shows under the circumstances there are no reasonable alternatives. In determining whether an Avoidance Area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the effective use of resources; and alternative sites. In accordance with the Commission's Section Criteria, a site may be approved if it is demonstrated that no significant adverse impacts will result from the location, construction and operation of the energy conversion facility. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the proposed energy conversion facility.

10. The area proposed by PPM for its Rugby Wind Farm includes one geographical area designated as an Exclusion Area. Portions of the project will be located on prime farmland. However, PPM states that prime farmland has been avoided to the maximum extent practicable and impacts to prime farmland are expected to affect less than 0.1% of the yearly production for the top five commodities in Pierce County. The

Commission finds that the prime farmland to be removed from use is of negligible impact on agricultural productions and the exclusion criteria for prime farmland should not apply.

11. The wind project will be located within the general vicinities of Waterfowl Production Areas (WPAs) managed by the U.S. Fish and Wildlife Service (USFWS), but no project facilities will be located closer than 0.25 miles from such areas. There is one parcel of irrigated land within the project area, but no project facilities will be located in that section.

12. The area designated by PPM for its proposed facility, does not include any geographical area listed as an Avoidance Area, except as follows:

- a. PPM has conducted a Class I Cultural Resources Inventory (CRI) for historic, cultural and archaeological resources in the area of the proposed facility. Three resource areas were identified in the Class I CRI and, in consultation with the North Dakota State Historic Preservation Office (SHPO), as areas to avoid. Before construction commences, a Class III CRI will be conducted to further ensure against disturbance of any areas of historic, cultural, or archaeological interest. A Class III CRI is a pedestrian survey for cultural resources within the vicinity of the construction zone. PPM will submit the report to the SHPO for review and comment prior to construction. PPM will also provide a copy of the report to the Commission.
- b. Woodlands and wetlands are present in the general vicinity of the wind project. PPM does not expect woodlands to be impacted but if woodlands are impacted, individual trees or woody vegetation will be replaced at a 2 to 1 ratio with saplings that are 2 or more years old. PPM will maintain a 500-foot buffer between all project facilities and the large (lacustrine) wetland complexes (greater than 50 acres); it will also avoid all other wetland areas to the extent practicable. USFWS permits are required for impacts to wetlands on conservation easements that cannot be avoided. No U.S. Army Corps of Engineers (USACE) jurisdictional waters are present within the wind farm and no USACE permits are required.

13. PPM submitted substantial evidence to demonstrate that the proposed energy conversion facility would not have any significant impact on the Selection Criteria set forth in North Dakota Administrative Code Section 69-06-08-01(3).

14. PPM submitted substantial evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility as far as is possible to meet the Policy Criteria set forth in North Dakota Administrative Code Section 69-06-08-01(4).

15. PPM proposes to locate the Rugby Wind Farm on an area of land comprised of approximately 46,000 acres of privately owned and state land in Pierce County, North Dakota.

16. The proposed Rugby Wind Farm and its related supporting facilities would occupy and disturb approximately 50 to 70 acres of land during the life of the plant. The proposed Rugby Wind Farm is located in an area that is zoned exclusively for agricultural use, most of which is planted with small grains and grasses under the United States Department of Agriculture Conservation Reserve Program (CRP), or pasture with native grasses. The facility would have little or no impact on farm operations. During construction, the project might cause temporary off-site impacts to farming due to an increase in construction-related traffic. Once operational the facility would generate little traffic. The location of facility structures might require changes to farming patterns in the immediate vicinity of the turbine towers and other above ground facilities, but the facility operation would not cause off-site impact on adjacent lands that would significantly interfere with or increase the cost of farm practices in the area of the proposed project.

17. Construction activities would be compatible with farm use and should not affect resource use of the remainder of the parcel or adjacent lands. Landowners would be able to conduct grazing and farming operations up to the turbines and between the turbine strings. Landowners may need to modify planting and harvesting patterns in the immediate vicinity of the turbine pads and roads; however, the spacing of the towers, height of the turbine blades and the depth of the underground cables are such that the facility would otherwise be compatible with farm uses. In addition, PPM's lease payments to farmers participating in the project will provide a steady source of income to supplement the unpredictable revenues from farming, which are subject to the fluctuations of weather and farm prices. Thus, the wind project will help assure the continued viability of farming in the project area. Operation of the facility would not have any effect on resource use of the remainder of the affected parcels or on adjacent lands. When the facility is retired, structures will be removed and the area restored to as near as original condition as is practical.

18. Wind turbines consist of two main components: the turbine tower and the nacelle. The nacelle is the portion of the wind turbine mounted at the top of the tower that houses the wind turbine itself, the rotor and blades, hub and gear box. Turbine towers would be anywhere from 262 feet to 345 feet tall at the turbine hub, dependant upon the size of the turbines which are ultimately utilized-ranging from 1.5 MW to 3.0 MW. The towers would be smooth, hollow steel structures.

19. Lighting would be limited to warning lights required by the Federal Aviation Administration (FAA) and security lights at the project substation and the operation and maintenance building.

20. The local economy would benefit through the employment opportunities offered by the project, primarily during construction, and the property taxes paid to Pierce

County. As noted above, compensation paid to landowners who lease space for roads, turbines and other facilities would provide revenue to supplement income earned from agricultural operations.

21. The proposed facility is not expected to have significant adverse economic and social consequences. No significant adverse impact is foreseen on the ability of the affected area to provide community services, such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation or traffic safety.

22. Storm water drainage impacts could occur during construction of new roads, staging areas and turbine foundations. PPM would prevent adverse impacts by use of erosion control measures required under National Pollution Discharge Elimination System (NPDES) permit and associated Storm Water Pollution Prevention Plan. Construction of the facility is not expected to have a significant adverse impact on the water quality of any receiving water.

23. The proposed facility would be located primarily on private property, limiting access by the public. Turbines would not be located closer than 1,000 feet from an inhabited dwelling or closer than 400 feet or the fall zone of the wind turbine, whichever is greater, to any developed road. The turbine towers would have locked access doors and turbine design would preclude climbing. Pad-mounted transformers located at each turbine would be located inside locked metal cabinets.

24. Wind turbines produce noise from the rotation of the turbine blades. Generally, turbine noise increases with wind speed. The noise standard adopted by the Pierce County Board of County Commissioners provides for levels not greater than 50 dBA at the nearest occupied residence. Based on modeling, PPM has calculated that the 50 dBA standard is exceeded at distances of less than 190 meters (623 feet) for 1.5 MW turbines and 240 meters (788 feet) for 3.0 MW turbines. PPM has proposed a set back of 1,000 feet from residences. At that distance, the 50 dBA noise standard adopted by the Pierce County Board of County Commissioners should not be exceeded.

25. Within the site area land is for the most part privately owned and there are no county or state recreational facilities. Federal recreational areas within the site area include five USFWS WPAs. The WPAs will be avoided and no facilities will be placed within 0.25 miles of the WPAs. Recreational opportunities in Pierce County include camping, hiking, biking, swimming, golfing, hunting, fishing and nature observation. While the wind turbines within the site area will be visible, they are not likely to cause any significant adverse impact to any recreational opportunities.

26. Numerous wetlands are identified within the site area. Wetlands range in size from isolated basins less than a few hundred square feet in size to large wetland complexes covering 200 acres. Wind turbines will be constructed on upland areas and thereby avoid wetlands on the lower areas of the landscape. Access roads and supporting

facilities will be designed to minimize impacts on wetlands. PPM has proposed a 500-foot setback around large (lacustrine) wetland complexes (greater than 50 acres) and 0.25 mile setback around WPAs within the site area to minimize any potential impacts to important wildlife habitat. Exhibit 4 confirms USFWS acceptance of this setback as sufficient to protect these areas.

27. Wildlife within the site area consists of birds, mammals, fish, reptiles, amphibians and insects associated with agricultural fields, pasture grasslands, and wetland areas. PPM has conducted, and will conduct, environmental studies of the project site to aid in detailed placement of turbines, roads, and associated facilities to avoid or minimize potential impacts to wildlife and habitat. Construction and operation of the proposed facility is expected to produce minimal impact to the wildlife within the site area.

28. PPM contacted the USFWS and the North Dakota Parks and Recreation Department to review the site area for threatened or endangered species and unique habitats. In response to this contact, the USFWS identified several federally listed threatened and endangered species potentially present in Pierce County. No impacts are anticipated to the species identified.

29. PPM incorporated the following criteria into its site plan of proposed and alternate turbine locations filed with the Commission on August 24, 2005:

- a. No wind turbine would be placed within 0.25 miles of any USFWS WPAs.
- b. No wind turbine would be placed within 500 feet of any large (lacustrine) wetland complex (greater than 50 acres).
- c. No wind turbine would be placed within 1,000 feet of any occupied residence.
- d. No wind turbine would be placed within 400 feet (or the height of the wind turbine, whichever is greater) from any developed road, transmission line or adjacent property not under lease by PPM.
- e. No wind turbine would be placed on the one parcel of land (located in Section 24, Township 158 North, Range 72 West) within the project area which is covered by an irrigation permit.

30. Wind farms are typically developed on prominent features such as hills and ridgelines. PPM demonstrated that arbitrarily requiring wind farms to maintain a particular setback along the perimeter of the project area may result in eliminating some tracts of land from development. PPM, therefore, recommends no minimum setback other than those set forth in paragraph 29 above, and approved by Pierce County.

31. Intervenor, J T McIntire, opposes the project and any turbine locations near his property, which consists of approximately five acres in the NW ¼ of Section 12, T158N, R72W. Mr. McIntire testified that turbine noise and visual distractions could impede his ability to write professionally and to raise dogs on his property. He is concerned that flashing lights will impede his view of the night sky while turbine noises echo in the still of the night. Mr. McIntire suggests that turbines not be placed on hill tops to preserve the aesthetic integrity of the land and he specifically requests that turbine numbers 52 thru 56 and 45 thru 48 be moved further away from his property.

32. Mr. McIntire provided a picture of his property (Hearing Exhibit Number 14) that shows a thick screening of trees surrounding and insulating his house and property from the visual and audio turbine impacts. PPM revised its preliminary turbine locations to eliminate a location that was approximately 1,400 feet from Mr. McIntire's property. The closest turbine location now proposed is turbine number 56 at a distance of approximately 3,600 feet from Mr. McIntire's property. At that distance, any noise that may be audible from the turbines would be far below the 50 dBA noise limit established by the Pierce County Commission. The Commission finds that Mr. McIntire's request to move turbines further from his property should be denied.

33. PPM Witness Tim Seck testified that siting turbines at higher elevations is standard energy practice to maximize turbine performance and necessary for project economics. The Commission finds Mr. McIntire's suggestion to site turbines at lower elevations would unreasonably limit the efficient use of area wind resources and should be rejected.

34. The Commission finds PPM's proposed and alternate turbine locations should be approved.

From the foregoing Findings of Fact, the Commission now makes its:

Conclusions of Law

1. The Commission has jurisdiction over this proceeding under North Dakota Century Code Chapter 49-22.

2. The wind energy facility proposed by PPM is an energy conversion facility as defined in North Dakota Century Code Section 49-22-03(11).

3. The proposed project is of such design, location and purpose that it will produce minimal adverse effects, as defined under North Dakota Century Code Section 49-22-05.2.

4. The Application submitted by PPM meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.

5. The location, construction, and operation of the proposed energy conversion facility will produce only minimal adverse effects of the environment and upon the welfare of the citizens of North Dakota.

6. The proposed energy conversion facility is compatible with the environmental preservation and the efficient use of resources.

7. The proposed energy conversion facility will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.

8. The proposed energy conversion facility is of such design, location and purpose that it will produce minimal adverse effects.

From the foregoing Findings of Fact and Conclusions of Law, the Commission makes its:

Order

The Commission orders:

1. Certificate of Site Compatibility No. 5 for an Energy Conversion Facility is issued to PPM for the construction, operation and maintenance of a wind energy facility known as the Rugby Wind Farm.

2. The site described in the Application is located approximately 4 miles north of Rugby, North Dakota, and is designated as the site for construction of the energy conversion facility.

3. Within the permitted area, PPM is authorized to site and construct up to 150 MW of wind turbines ranging in size from 1.5 to 3.0 MW as identified in the proposed and alternate locations map filed with the Commission on August 24, 2005, and electrical collection and communication lines, access roads, an operation and maintenance building, meteorological towers, and associated facilities identified in the Application for the Rugby Wind Farm.

4. Mr. McIntire's request to move proposed turbine locations further from his property is denied.

5. PPM shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed energy conversion facility and shall obtain all other necessary approvals and permits, and shall provide copies of all approvals and permits to the Commission prior to the construction of the energy conversion facility.

6. PPM shall conduct a preconstruction conference prior to commencement of any construction, and must include a PPM representative, its construction supervisor, and a representative of Commission staff to ensure that PPM fully understands the conditions set forth in this order.

7. PPM shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and while construction is underway, PPM shall keep the Commission updated of construction activities on a weekly basis.

8. PPM shall construct and operate the energy conversion facility in the manner described in its Application and at the hearings, and in accordance with all applicable safety requirements.

9. PPM shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles that PPM becomes aware of and that were not previously reported to the Commission.

10. If any cultural resource, paleontological resource, archeological site, historical resource, or gravesite is discovered during construction of the facility, earth disturbing activities in the immediate vicinity of the discovery must be halted. The resource must be marked, preserved and protected from any further disturbance until a professional examination can be made in consultation with the ND SHPO. A report of such examination will be filed with the Commission and clearance to proceed must be given by the SHPO and the Commission.

11. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use and areas used as temporary roads during construction must be restored to their original condition.

12. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.

13. Reclamation, fertilization, and reseeding is to be done by PPM according to the Natural Resource Conservation Service recommendations for CRP, native prairie and other non-cropped lands unless otherwise specified by the landowner and approved by the Commission.

14. PPM's obligation for reclamation and maintenance of the site shall continue throughout the life of the energy conversion facility.

15. When the facility is retired, structures will be removed and the area restored to as near as original condition as is practical.

16. Trees or other woody vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed. Landowners shall be given the option of having replacement trees or shrubs planted on the landowner's property or waiving that requirement in writing and allowing PPM to plant the replacement trees or shrubs elsewhere. PPM shall inspect tree replacements once a year for three years and send a report on or before October 1 of each year to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75%.

17. PPM shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversion facility.

18. PPM shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversion facility.

19. Staging areas or equipment shall not be located on cultivated land unless otherwise negotiated with landowners.

20. PPM shall remove all waste that is a product of construction and operation, restoration and maintenance of the site, and properly dispose of it on a regular basis.

21. PPM shall, as soon as practicable upon the completion of the construction of each wind turbine, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.

22. PPM shall provide, if requested, educational material for landowners within the site boundaries about the proposed energy conversion facility and any restriction or danger concerning the proposed energy conversion facility.

23. PPM shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.

24. PPM shall advise the Commission of any extraordinary events which take place at the site of the energy conversion facility, such as a tower collapse, turbine failure, injured worker or private individual, the death of any threatened or endangered species or the discovery of a large number of dead birds or bats on the site within five business days of such event.

25. PPM shall implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by PPM.

26. PPM shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.

27. PPM shall obtain approval from the Commission or from Commission staff prior to any changes in structure locations.

28. PPM shall provide the Commission with as-built drawings post construction.

29. The authorization granted by the Certificate of Site Compatibility shall be effective for the life of the project but is subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

PUBLIC SERVICE COMMISSION

Susan E. Wefald
Commissioner

Tony Clark
President

Kevin Cramer
Commissioner